

Organic Electroluminescent Device Based On 2,5-Diaminoterephthalic Acid Derivatives

ABSTRACT

The application relates to an organic electroluminescent device which contains 2,5-diaminoterephthalic acid derivatives of formula 1a as emitter substances in one or several emitter layers in a pure or doped manner. The ring A is a triple unsaturated benzole ring wherein $R^{4'}$ and $R^{8'}$ are equal to zero or ring A is a double unsaturated ring respectively provided with a double bond in the 1,2 position and 4,5-position, and wherein R^{10} is a nitrile radical $-\text{CN}$ or a radical

$\text{C}(=\text{X}^1)-\text{X}^2\text{R}^1$; R^{11} is a nitrile radical $-\text{CN}$ or a radical $-\text{C}(=\text{X}^3)-\text{X}^4\text{R}^5$, X^1 and X^3 are oxygen, sulphur or imino, X^2 and X^4 are oxygen, sulphur or optionally substituted amino, R^1 to R^8 , $\text{R}^{4'}$ and $\text{R}^{8'}$ are H, C1-C20-alkyl, aryl, heteroaryl, R^4 and R^8 can also be halogen, nitro, cyanogen or amino, R^2 to R^4 , R^6 - R^8 , $\text{R}^{4'}$ and $\text{R}^{8'}$ can also be trifluoromethyl or pentafluorophenyl, and wherein certain radicals can form a saturated or unsaturated ring. The novel devices are characterised by narrow emission bands, low driver voltages, high photometric efficiency and high thermal stability within a broad spectral range.

